CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
895 Aerovista Place , Suite 101
San Luis Obispo, California 93401-7906

MONITORING AND REPORTING PROGRAM NO. R3-2004-105 FOR

DUKE ENERGY POWER SERVICES MORRO BAY FOSSIL FUELED POWER PLANT SAN LUIS OBISPO COUNTY

GENERAL

Duke Energy Power Services (Discharger) shall monitor the three hazardous waste surface impoundments located at the Morro Bay Power Plant in accordance with the following.

A. GROUND WATER MONITORING

1. The Discharger shall conduct detection groundwater monitoring to detect waste constituents from the three surface impoundments. Groundwater shall be monitored at least quarterly. Groundwater monitoring shall be conducted as specified in the Ground Water Monitoring Plan included in the June 30, 1999 DTSC Hazardous Waste permit, or its subsequent approved iterations. Evaluation and corrective action monitoring as defined by Title 23, Chapter 15 shall be conducted, if necessary.

2. Available monitoring data for each constituent in each well shall be graphically represented, concentration versus time, after each sampling event. An explanation of observed variations or trends over time shall be included in the monitoring report.

3. The Discharger shall install monitoring wells as outlined in the following well construction specifications:

   a. Monitoring wells shall be constructed in a manner that maintains the integrity of the drill hole, prevents cross-contamination of saturated zones, and produces representative ground water samples from discrete zones within the aquifer unit each well is intended to monitor.

   b. For any proposed wells, Discharger shall submit a proposal describing specific drilling techniques, monitoring well construction materials and dimensions, types of sealing materials and other technical details for compliance review by the Executive Officer.

   c. Monitoring wells shall be installed using approved drilling methods. The drill holes shall be logged during drilling under the direct supervision of a registered geologist or certified engineering geologist. Logs of monitoring wells shall be filed with the Department of Water Resources. All information used to construct the wells shall be submitted to the Regional Board.

B. SURFACE WATER MONITORING

Regular surface water monitoring is not required. However, if an uncontrolled release (spill, leak, overtopping or any other event) of waste occurs from the regulated surface impoundments, or related appurtenances, which could degrade surface water, subject surface water must be sampled

for all parameters potentially present in the waste at time(s) and location(s) most likely to detect waste constituents in subject surface water. Surface water includes Morro Bay, Morro Creek, Estero Bay, all drainage ways leading to those waters, and any other surface water body accessible to humans, fish or wildlife.

C. UNSATURATED ZONE MONITORING

Unsaturated zone monitoring is not required because the vadose zone is thin and the bottom of the impoundment liner systems incorporates a groundwater removal layer. The impoundment liner system includes two Leachate Collection and Removal Systems and the Ground Water Detection, Collection and Removal System.

D. IMPOUNDMENT LINER MONITORING

1. The Discharger shall visually inspect each surface impoundment and primary (upper) liner daily. The Quarterly reports shall summarize the inspections and all repairs made to the liner or impoundment system.

2. The Discharger shall determine the integrity of the primary liners of the surface impoundments annually. The inspection/test method shall not damage the liner and shall be sensitive enough to detect problems. This annual inspection must include, at a minimum, removing sufficient wastewater and sludges for visually inspecting the integrity of the primary (upper) liner. The integrity of the liner systems shall be certified by a qualified professional engineer registered in California. Any damage observed during the inspection shall be repaired as soon as possible and prior to any subsequent discharge.

   A report shall be prepared each year documenting the annual inspection and maintenance for each surface impoundment. The report shall include a detailed description and map(s) illustrating the annual inspection and repair procedures, and shall be submitted within 90 days of the inspection.

E. LEACHATE COLLECTION AND REMOVAL SYSTEM, GROUND WATER DETECTION, COLLECTION AND REMOVAL SYSTEM MONITORING

The Discharger shall inspect daily the leachate collection and removal system (LCRS) and the ground water detection, collection and removal system (GDCRS). The results of the daily inspections shall be maintained in the "Operating Record" for the hazardous waste surface impoundments. The Quarterly reports shall document the results of the inspections which identify repairs that need to be made to the LCRS and GDCRS and the volumes pumped from the LCRS and GDCRS.

The Discharger shall implement the "Response to Liquid in the Leachate Collection System" as specified by Attachment 1 included as part of this Monitoring and Reporting Program.

Daily monitoring of the LCRS and GDCRS is required as follows:

1. The liquid levels in standpipes 1, 2, and 3 must be measured and recorded. All pumpable liquids shall be pumped and the volume pumped shall be measured and recorded.

2. Records of liquid levels and volumes of liquid removed from the standpipes shall be reviewed daily and compared to the "Response to Liquid in the Leachate Collection System" (Attachment 1) and appropriate action taken.

3. The rate of liner leakage shall be determined and recorded daily.

Any liquid detected in the LCRS or GDCRS shall be evaluated and monitored in accordance with the "Response to Liquid in the Leachate Collection System" (Attachment 1).

F. DISCHARGE MONITORING

The Discharger shall obtain representative samples of boiler cleaning wastes discharged to the Ponds. The representative samples of a single boiler cleaning discharge event shall be comprised of at least one composite of at least four discrete samples collected throughout the entire discharge. The samples of boiler cleaning wastes discharged to the Ponds shall be analyzed for the following constituents to determine if the wastes are Restricted Hazardous Wastes (Health and Safety Code Section 25122.7):

pH
Arsenic
Cadmium
Chromium (+6)
Lead
Mercury
Nickel
Selenium
Thallium

If the wastes discharged into the Ponds are restricted hazardous wastes, the Discharger shall submit documentation within 90 days that the restricted wastes were handled in accordance with this Order and the Health and Safety Code. The documentation shall include laboratory reports of chemical analyses and plant pH monitoring records.

G. REPORTING

The Discharger shall prepare and submit Quarterly Monitoring reports. The reports shall be submitted to the Board no later than 90 days after the quarterly monitoring event. Quarterly monitoring periods commence in January, April, July and October and sampling events are usually conducted during the first month of the quarter. The monitoring report shall include the following:

1. Monitoring results data arranged in tabular and graphical form so the date, constituents, concentrations, and ground water elevation are readily discernible. Groundwater chemical concentration trend graphs shall be submitted. The data shall be summarized in such a manner to clearly illustrate compliance or noncompliance with waste discharge requirements.

2. Copies of water quality analysis data sheets from the laboratory.

3. Copy of sampling logs (records) for each well.

4. Groundwater contour map.

5. Determinations of the velocity and direction of ground water flow beneath the three surface impoundments. Provide the velocity and direction of ground water flow during each sampling event. The quarterly report shall include a discussion of how observed ground water rate, flow and direction compare with those from previous determinations, the appearance of any trends, and any other items that may indicate a potential change in the hydrogeologic conditions beneath the site.

6. Statistical results of ground water monitoring data analysis.

7. Leachate monitoring data including dates, volume and analysis of liquids pumped from either or both leachate collection and removal system. The results shall be presented in tabular and graphical form.

8. Sludge handling data including date and volume of sludge removed from each surface impoundment and point of disposal.

9. Report of annual visual integrity inspection of liners and/or results of annual liner visual integrity inspection/testing.

10. Report of inspections of the leachate collection and removal system and the groundwater detection, collection and removal system.

11. Report of groundwater detection, collection and removal system monitoring data including identification of pond, dates and volumes of groundwater pumped from the GDCRS. The data shall be presented in tabular form.

Executive Officer

10-27-04

Date

S/SLIC/Regulated Sites/San Luis Obispo Co./Morro Bay Power Plant/Duke/Hazardous Waste Ponds, WDR/MRP R3-2004-105 draft3

ATTACHMENTS

1: "Response to Liquid in the Leachate Collection System"

ATTACHMENT 1

RESPONSE TO LIQUID IN THE LEACHATE COLLECTION SYSTEM

If liquid is discovered in any LCDRS standpipes, the operator detecting the presence of liquid, along with the operating foreman, and appropriate plant management, will evaluate the Surface Impoundment/Leachate Collection Inspection Log and the operator's assessment of the situation. After comparing the actual volume detected in the standpipe with the Decision Matrix for the Response Action Plan (included below), the appropriate response, as described below, will be performed.

All notifications to the agencies will be made by the environmental staff or as delegated by the Production Superintendent. Similarly, sampling and analysis of liquids in the LCDRS will be directed by the environmental staff or the Production Superintendent to determine the source of the liquid.

Decision Matrix for Response Action Plan		PRIMARY LCDRS		
		< 0.25 gpd	**> 0.25 gpd and < 10 gpd**	**> 10 gpd**
SECONDARY LCDRS	**< 0.25 gpd**	NORMAL OPERATIONS	1	2
	> 0.25 gpd and < 10 gpd	2	2	3
	> 10 gpd	3	3	3

RESPONSE LEVEL 1

A. If a boiler chemical cleaning is in progress, continue the cleaning operation and discharge the solutions into the pond.

B. Increase the inspection frequency (and pumping frequency) to once per 8-hour shift until three consecutive 8-hour shifts are recorded at ≤0.25 gallons/shift.

C. Follow the normal treatment procedures.

D. If the liquid in the primary standpipe persists, contact DTSC and CCRWQCB and establish an appropriate course of action.

E. Transfer contents of leaking pond to a non-leaking pond (if possible). If pond contents cannot be transferred to a non-leaking pond, immediately arrange for additional storage capacity.

F. Inspect primary liner and repair as needed.

RESPONSE LEVEL 2

A. Contact DTSC and the CCRWQCB and establish and appropriate course of action.

B. Increase the inspection frequency (and pumping frequency) to once per 8-hour shift until three consecutive 8-hour shifts are recorded at ≤0.25 gallons/shift.

C. If a boiler chemical cleaning operation is in progress, continue the cleaning operation and discharge the solutions into the pond.

D. Follow the normal treatment procedures before emptying the leaking pond.

E. Inspect primary liner in applicable pond and repair as needed.

RESPONSE LEVEL 3

A. Notify DTSC and the CCRWQCB immediately and provide in writing an evaluation of the potential for unauthorized discharge from the pond per the Hazardous Waste Contingency Plan.

B. Increase the inspection frequency (and pumping frequency) to once per 8-hour shift until three consecutive 8-hour shifts are recorded at ≤0.25 gallons/shift.

C. Discontinue all discharges to the pond. If a boiler chemical cleaning is in progress, route all discharges to a non-leaking pond.

D. Transfer contents of leaking pond to a non-leaking pond (if possible). If pond contents cannot be transferred to a non-leaking pond, immediately arrange for additional storage capacity.

E. Take necessary precautionary measures to ensure no additional wastes are discharged to the pond.

F. Inspect primary liner in applicable pond and repair as needed. Take action to determine integrity of secondary and tertiary liners, as necessary.